

The Claims:

1. (previously amended) A field grading material for grading an electric field in high voltage applications, the field grading material comprising:

a polymeric matrix comprising a filler, wherein the filler comprises a resistive and/or capacitive field grading effective amount of particles having at least one dimension smaller than or equal to 100 nm, wherein said particles comprise any semiconducting material having an energy bandgap larger than 0 eV and smaller than 5 eV, wherein the particles are dispersed in the polymeric matrix, and wherein the field grading material comprises less than 40% by volume of the filler particles.

2. (previously amended) The field grading material according to claim 1, wherein the filler comprises a field grading effective amount of particles having one dimension between 2-80 nm.

3. (cancelled)

4. (previously amended) The field grading material according to claim 1, wherein said particles comprise any material where the bulk has a dielectric constant at infinitely high frequencies of at least 5.

5. (previously amended) The field grading material according to claim 1, wherein said particles have an aspect ratio of more than 1.

6. (previously amended) The field grading material according to claim 5, wherein the particles having an aspect ratio of more than 1 are randomly oriented in the matrix.

7. (previously amended) The field grading material according to claim 5, wherein the particles having an aspect ratio of more than 1 are oriented in essentially the same direction in the matrix.

8. (previously amended) The field grading material according to claim 5, wherein said particles having an aspect ratio of more than 1 are provided in the form of fibers, fibrils, whiskers, flakes, ellipsoids or tubes.

9. (previously amended) The field grading material according to claim 1, wherein said particles constitute less than 40% by volume of the field grading material.

10. (previously amended) The field grading material according to claim 1, wherein the matrix essentially consists of rubber, thermoplastics or thermoplastic elastomer.

11. (previously amended) The field grading material according to claim 10, wherein the matrix essentially consists of polyolefin rubber or thermoplastic polyolefin elastomer/plastomer, or of crystalline thermoplastics.

12. (previously amended) A device for grading an electric field in high-voltage

applications, the device comprising:

a field grading material comprising a polymeric matrix comprising a filler, wherein the filler comprises a resistive and/or capacitive field grading effective amount of particles having at least one dimension smaller than or equal to 100 nm, and wherein said particles comprise any semiconducting material having an energy bandgap larger than 0 eV and smaller than 5 eV.

13. (previously amended) A method for grading an electric field at a joint or termination of ~~an~~ a high-voltage electric power cable, the method comprising:

combining a polymer with a filler, wherein the filler comprises a resistive and/or capacitive field grading effective amount of particles having at least one dimension smaller than or equal to 100 nm, and wherein said particles comprise any semiconducting material having an energy bandgap larger than 0 eV and smaller than 5 eV;

forming a body of the polymer and filler; and

introducing the body into the cable joint or cable termination.

14. (previously presented) The field grading material according to claim 1, wherein the filler comprises a field grading effective amount of particles having one dimension between 5-50 nm.

15. (previously presented) The field grading material according to claim 1, wherein the filler comprises a field grading effective amount of particles having one dimension between 5-30 nm.

16. (previously presented) The field grading material according to claim 1, wherein said particles comprise ZnO or SiC.

17. (previously presented) The field grading material according to claim 1, wherein said particles comprise Al_2O_3 , TiO_2 or BaTiO_3 .

18. (previously presented) The field grading material according to claim 1, wherein said particles have an aspect ratio of more than 5.

19. (previously presented) The field grading material according to claim 18, wherein the particles having an aspect ratio of more than 5 are randomly oriented in the matrix.

20. (previously presented) The field grading material according to claim 18, wherein the particles having an aspect ratio of more than 5 are oriented in essentially the same direction in the matrix.

21. (previously presented) The field grading material according to claim 18, wherein said particles having an aspect ratio of more than 5 are provided in the form of fibers, fibrils, whiskers, flakes, ellipsoids or tubes.

22. (previously presented) The field grading material according to claim 1, wherein said particles have an aspect ratio of more than 10.

23. (previously presented) The field grading material according to claim 22, wherein the particles having an aspect ratio of more than 10 are randomly oriented in the matrix.

24. (previously presented) The field grading material according to claim 22, wherein the particles having an aspect ratio of more than 10 are oriented in essentially the same direction in the matrix.

25. (previously presented) The field grading material according to claim 22, wherein said particles having an aspect ratio of more than 10 are provided in the form of fibers, fibrils, whiskers, flakes, ellipsoids or tubes.

26. (previously presented) The field grading material according to claim 1, wherein said particles constitute less than 30% by volume of the field grading material.

27. (previously presented) The field grading material according to claim 1, wherein said particles constitute less than 20% by volume of the field grading material.

28. (previously presented) The field grading material according to claim 10, wherein the matrix includes Ethylene Propylene Diene Monomer rubber or silicone rubber, or polyethylene.

29. (previously presented) The device according to claim 12, further comprising a cable joint or cable termination, wherein the body is arranged around a portion of the cable.

30. (previously presented) The field grading material according to claim 1, wherein the field grading material comprises less than 30% by volume of the filler particles.

31. (previously presented) The field grading material according to claim 1, wherein the field grading material comprises less than 20% by volume of the filler particles.